

U.S. Patent Application Serial No. 10/619,217
Reply to Office Action dated December 23, 2004

Amendments to the Claims:

This listing of claims will replace all prior versions and listing of claims in the application.

Claims 1 and 4-10 are amended.

Listing of Claims:

1. (Currently Amended) A hub-bearing assembly for the wheel of a motor vehicle, the hub [[(1)]] forming integrally or being securely fixed to a radial flange [[(7)]] to be fastened to a wheel [[(8)]], wherein, associated with the assembly is an optical measuring device [[(14)]] mounted on a non-rotating part [[(12)]] of the vehicle and operatively axially facing an essentially radial optically reflecting surface [[(13)]] secured to or integral with the flange [[(7)]] for detecting real time variations of the axial position of the surface [[(13)]] due to elastic deformation of the flange [[(7)]], the measuring device [[(14)]] including emitter means for projecting a light radiation onto the reflecting surface [[(13)]] and receiver means for receiving the light radiation reflected back by the reflecting surface [[(13)]], for detecting real time variations of the axial position of the surface [[(13)]] due to elastic deformation of the flange [[(7)]] caused by forces transmitted from the wheel [[(8)]] to the hub flange [[(7)]].

2. (Canceled)

3. (Canceled)

4. (Currently Amended) The assembly of claim 1, wherein the optical measuring device [[(14)]] includes emitter means for emitting a laser beam.

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5. (Currently Amended) The assembly of claim 1, wherein the measuring device [[(14)]] is arranged for carrying out said measuring operation in proximity of the peripheral zone of the hub flange [[(7)]].
6. (Currently Amended) The assembly of claim 1, wherein the surface [[(13)]] is facing the inboard side of the vehicle.
7. (Currently Amended) The assembly of claim 1, wherein the measuring device [[(14)]] is fixable to a non-rotating race [[(12)]] of the bearing.
8. (Currently Amended) The assembly of claim 1, wherein the measuring device [[(14)]] is connected [[(15)]] to an electronic processing unit mounted on board of the vehicle and set for automatically controlling, based on the deformation signals received from the measuring device [[(14)]], the wearable members of the braking system for adapting their position to the position of a rotor brake [[(5)]] rigidly connected to the flange [[(7)]] of the hub [[(1)]].
9. (Currently Amended) The assembly of claim 1, wherein the measuring device [[(14)]] is connected [[(15)]] to an electronic processing unit mounted on board of the vehicle and set for recognizing, based on the deformation signals received from the measuring device [[(14)]]], a condition indicative of an impending loss of adhesion with the road.
10. (Currently Amended) The assembly of claim 1, wherein the measuring device [[(14)]] includes an inductive position sensor and that the essentially radial surface [[(13)]] is of a metallic material.